

1. PRECAUTION

Please read through this Manual before use of the instrument for correct handling. Please keep this Manual carefully after use. This instrument has been thoroughly tested at the factory before shipment. When you receive it, visually inspect it for damage and check the accessories.

● Model number and specifications check
Check to see model number and specifications on the plate attached to side face of the converter are as ordered.

● Contents of the instruction manual
This instruction manual provides instructions on handling, external wiring and safety use of the converter.

2. GENERAL

This compact plug-in type converter receives contact pulse, voltage pulse or current pulse from the field and converts it into isolated transistor contact pulse or dry contact AC switch pulse.

Accessories :

- Spacer (Use for DIN rail mounting)..... 1
- Tag Number Label 2

3. MOUNTING METHOD

JUXTA M Series Transmitters can be mounted on wall or DIN rail.

3.1 Wall Mounting

Unlock stoppers of converter and pull out main body from socket as shown in Fig. 1. Then fix the socket on the wall with 2 M4 screws. Take installation gap as shown in Fig.3.

3.2 DIN rail mounting

Insert DIN rail into the upper of the DIN rail groove on rear of socket of the converter and fix the rail with slidlock at the lower of the converter as shown in Fig.2. Use furnished spacer so as converters would be mounted with 5mm gap.

3.3 Duct Installation

Install ducts, if necessary, aparting from top of the converter more than 20mm.

4. EXTERNAL WIRING

CAUTION Wiring should be done after ensuring power break of cable.

See Fig.5~7 for wiring.

Wiring should be done to M3.5 screw terminals of the socket. Flexible twisted wires and good contact of durable round crimp-on terminals are recommended to be used.

● Signal cable having more than 0.5mm² and power cable having more than 1.25mm² of nominal cross-sectional area of conductor are recommended.

4.1 Wiring

- ① See Fig.4 for terminal arrangement.
- ② Connect voltage pulse or dry voltage contact pulse signal cable from transmitter to 3(+), 4(-) of the converter. (See Fig.5 : Wiring Diagram 1)
- ③ When receiving voltage pulse by driving generator through internal power supply, connect input signal cable to 5(P5+), 3(+), 4(-). (See Fig. 6 : Wiring Diagram 2)

FIG.1 WALL MOUNTING

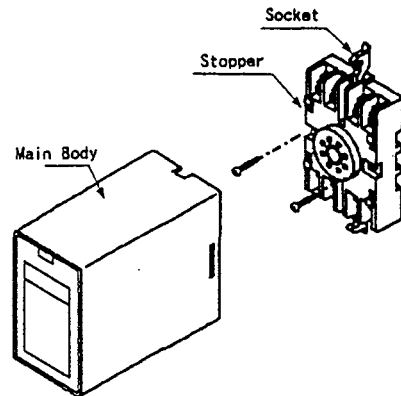


FIG.2 DIN RAIL MOUNTING

When remove the converter from DIN Rail, lower the slidlock with (-) screwdriver

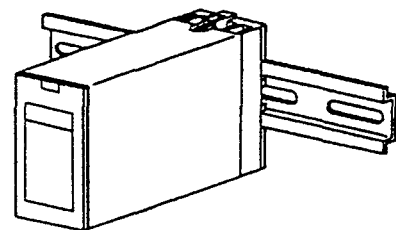
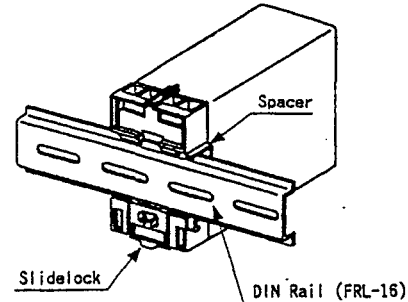
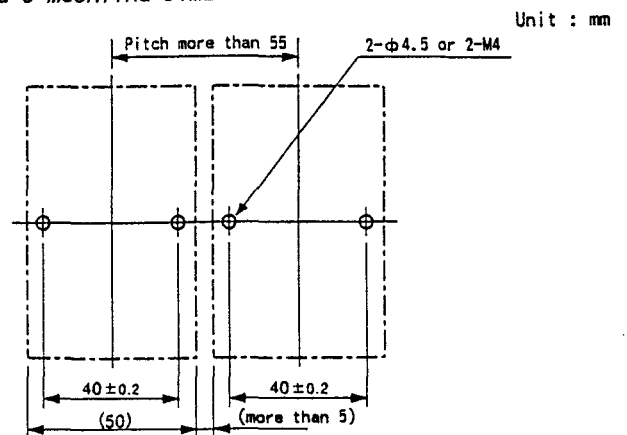


FIG 3 MOUNTING DIMENSION



- ④ When receiving current pulse by driving generator through internal power supply, connect input signal cable to 5(PS+), 3(+) of the converter.
(See Fig. 7 : Wiring Diagram 3)
- ⑤ Connect output signal cable to 1(+), 2(-).
- ⑥ Connect power cable to 7(L+), 8(N-) and ground to 6(G).

NOTE : Operation caused by erroneous wiring is not warranted.

Apart wiring of power cable and input/output cable from noise source. Otherwise, accuracy may not only be warranted.

5. SETTING OF CURRENT PULSE LOAD RESISTOR AND DRY VOLTAGE CONTACT INPUT FILTER

In case signal from generator is current pulse, conversion it into voltage is necessary by using current pulse load resistor. (seven types of resistance value settings are available through SW1~3). Open the front cover and set load resistor so as relationship between current wave height from generator (p-p) and synthetic load resistance R_t would satisfy swing width $i \times R_L \geq 2V$

If chattering noise arises when receiving dry contact (mechanical relay, etc.), noise affect can be controlled by making switch (SW4) ON. However, in this case, input frequency range is limited to less than 100Hz (pulse width more than 3ms). (See Fig.8)

SW1~3 : Setting of load resistor for current pulse (set it at OFF when other than current pulse input)

SW4 : Setting of filter

SW1	SW2	SW3	Resistance	SW4
ON	OFF	OFF	200Ω	Filter ON/OFF
OFF	ON	OFF	500Ω	
OFF	OFF	ON	1kΩ	
ON	ON	OFF	143Ω	
ON	OFF	ON	167Ω	
OFF	ON	ON	500Ω	
ON	ON	ON	143Ω	

(SW1~4 are set at OFF when shipment from factory)

6. PULSE RATE SETTING

Open the front cover and set pulse rate by using 4 digits rotary switch. Rotary switch stands X0.1, X0.01, X0.001, X0.0001 from the top. Set it at 0~9 on each digit. (See Fig.9)

7. INSTALLATION PLACE AND HANDLING

- ① Avoid installation in such environments as shock, vibration, corrosive gas, dust, water, oil, solvent, direct sunlight, radiation, powerful electric and magnetic fields.
- ② To protect the converter from inducement of thunder surges in power and signal cables, use arrester between the converter and equipment installed in the field.

8. SAFETY USE

Following caution for safety should be taken for handling of the converter. We are not responsible for damage caused by use contrary to caution.

CAUTION

- After inserting the main body into socket, fix it to socket by stopper (upper and lower).
- Following items should be checked before power on. Use of the converter ignoring the specifications may cause overheating and burning.

FIG. 4 TERMINAL ARRANGEMENT & TERMINAL CONNECTION

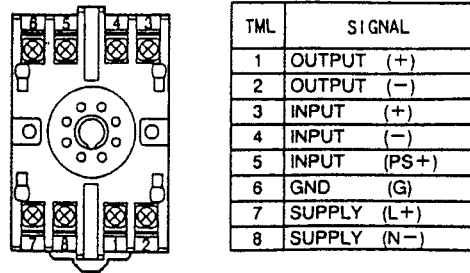


FIG. 5 WIRING DIAGRAM 1

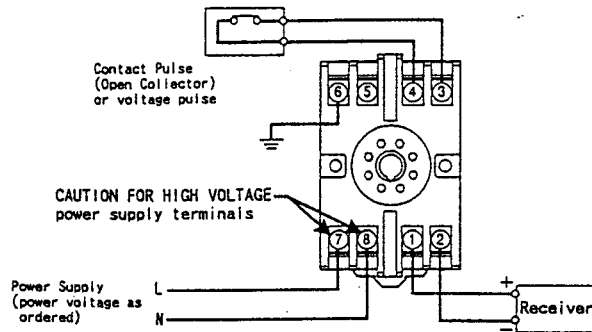


FIG. 6 WIRING DIAGRAM 2

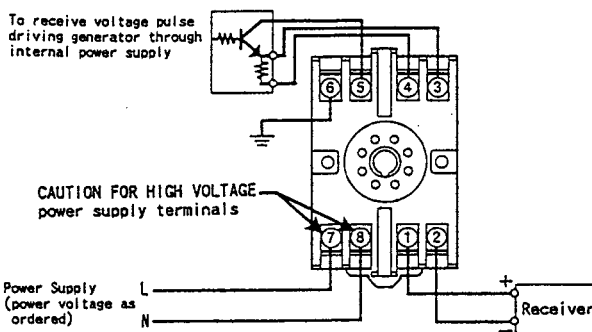


FIG. 7 WIRING DIAGRAM 3

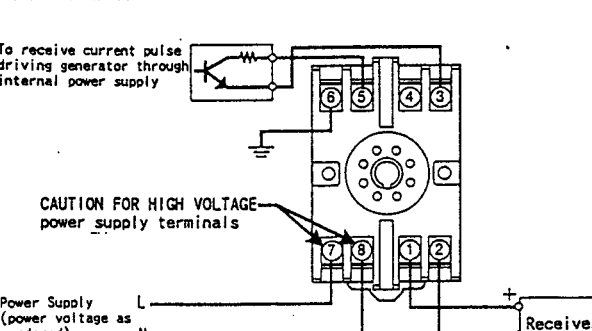
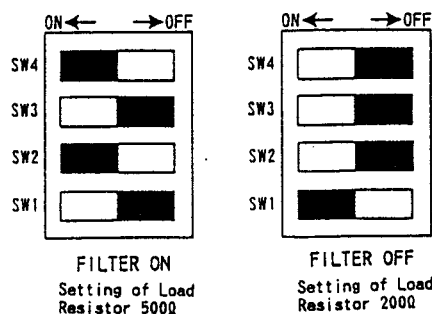


FIG. 8 SETTING OF CURRENT PULSE LOAD RESISTOR AND FILTER



- (a) Voltage of power supply and input signal be applied to the converter should meet with required specifications.
 - (b) External wiring to terminals should be connected correctly (See Article 4).
- Do not use the converter in such dangerous places where exist inflammable and explosive gas or steam.

- On terminals 7 and 8 shown in Fig.4, high voltages of 85~132V AC or 170~264V AC be applied in case of AC power supply and 85~150V DC be applied in case of DC power supply. So, do not touch terminals.

⚠ Instrument types having power supplies of 85~132V AC/85~150V DC, 170~264V AC, these high voltages exist internally. When opening front panel for setting of load resistor or filter, be careful for electric shock touching other than these parts by screw-driver or hand.

9. MAINTENANCE

Carry out the following calibration after warmup the converter for more than 10~15 minutes to satisfy its specified performance.

9.1 Calibration Equipment

- Pulse Generator.....1
(Japan Hewlett-Packard Type 3314A or equivalent)
- Counter1
(Japan Hewlett-Packard Type 5334B (or equivalent))
- Resistor & dry cell.....1
(1kΩ, 1.6kΩ 1 each ; 6V dry cell ... 1)

9.2 Calibration

- ① Connect each equipment as shown in Fig.11.
- ② Input/output characteristic check
Use Pulse Generator and generate rectangular pulse at optional frequency within ordering specified range and measure its value through counter or oscilloscope. (See dot line in Fig.11 for connection to counter or oscilloscope)
- ③ Connect counter to 1 and 2 terminals and check to see output frequency is
input frequency x ordering specified rate
Also check through oscilloscope the output pulse wave is well shaped.

FIG.9 SETTING OF PULSE RATE

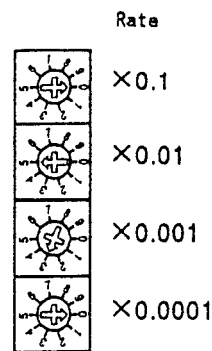


FIG.10 FRONT SWITCH

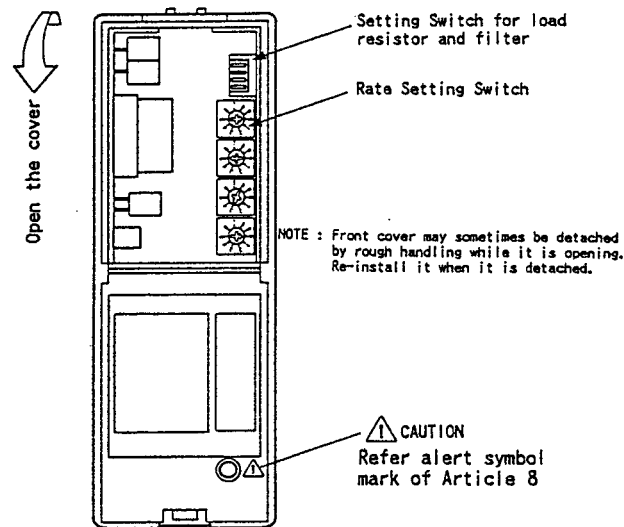
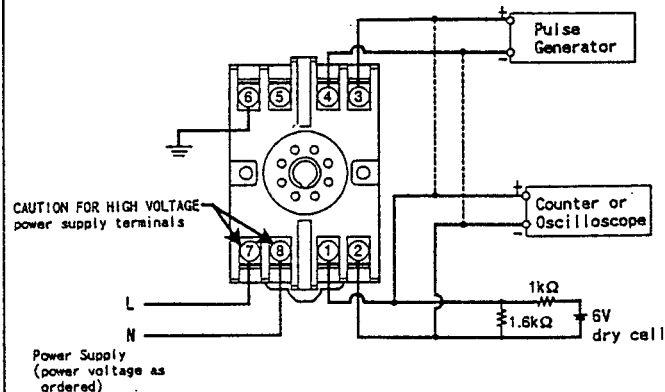


FIG.11 WIRING OF CALIBRATION EQUIPMENT



Note:

When power of MP4 is turned on/off, one pulse may be counted by the pulse input device which connects to the MP4.

